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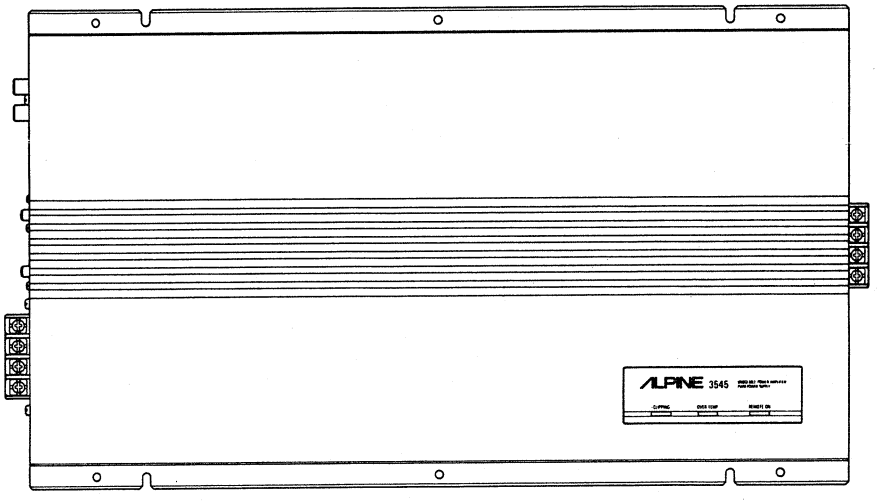
ALPINE SERVICE MANUAL

Bridgeable Power Amplifier



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Specifications

1. 4ohm 2-channel stereo mode

T.H.D	0.3%
Frequency Reponse(-1dB at 1W output)	20Hz to 20KHz
Channal Separation(at 1KHz)	50dB
Residual Noise(Input shorted, Wideband)	10mV
Current Drain(at no signal)	8A
(at 250W Power output)	95A
Input Sensitivity(at 250W Power output)	Fix. 0.5V ±20%
	Var. 0.1V±30%, 2V±30%
Input Inpedance	10Kohms±20%
Signal to Noise Ratio(IHF-A, at 150W)	100dB

2. 2ohms-2-channel stereo mode

Power Output (0.8% THD)	300w/CH
Current Drain(at 350W Power output)	170A

3. 4ohms BTL mono mode

Power Output (0.8% THD)	600w/CH
Current Drain(at 700W Power output)	170A

4. General

Fuse Requirement	30A ×3(Battery)
Power Source	14.4VDC
Semiconductors	11ICs, 66Transistors, 2FETs
	49Diodes, 30Zener Diodes
Dimensions(W×H×D)	440×73×232 mm
Weight	8.1kg

Parts Locations and Disassembly Instructions

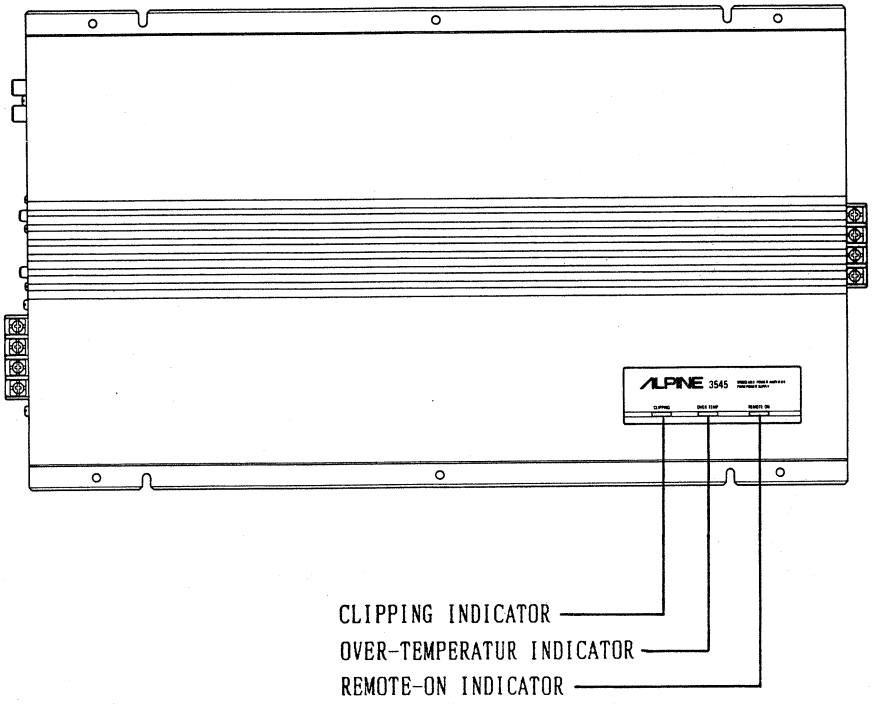


Figure 1

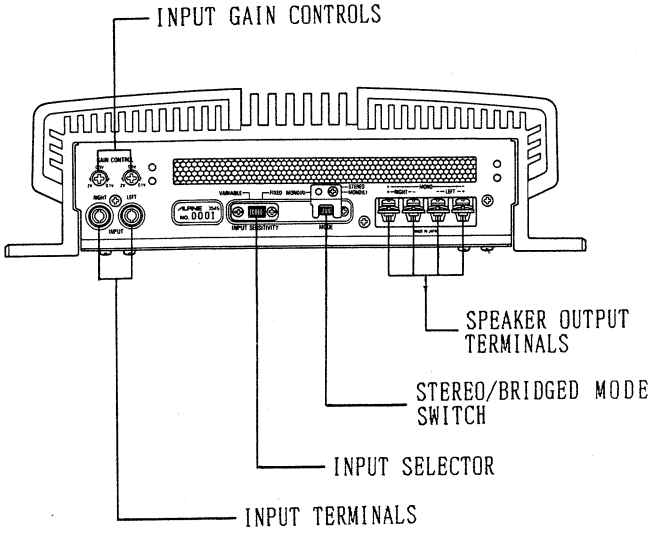


Figure 2

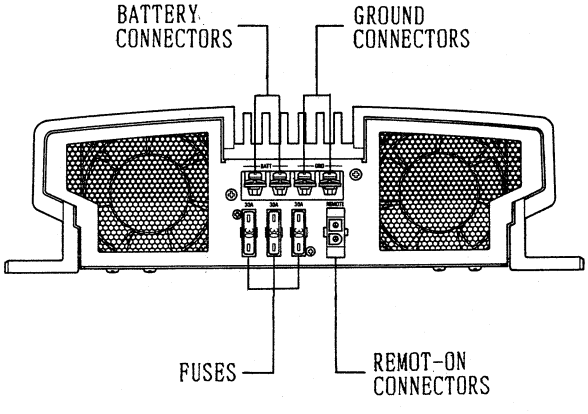


Figure 3

1. Removal of Bottom Cover

(1) Remove eight screws marked "●" as showm in Figure 4.

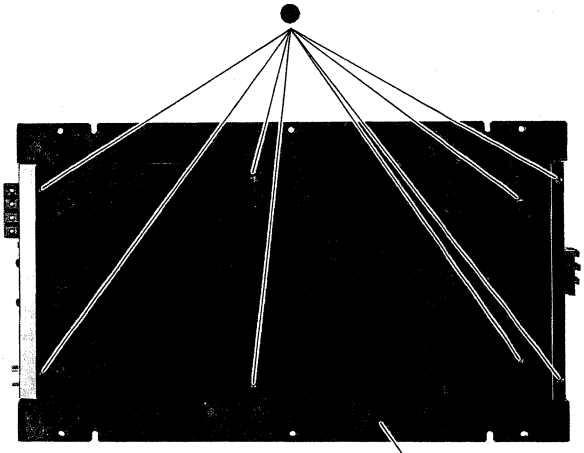


Figure 4

2. Removal of Amp Block P.C. Board and Supply Block P.C. Board.

(1) After removal of Bottom Cover, remove seventeen screws marked "○" and stud screws marked "□" as shown in Figure 5.

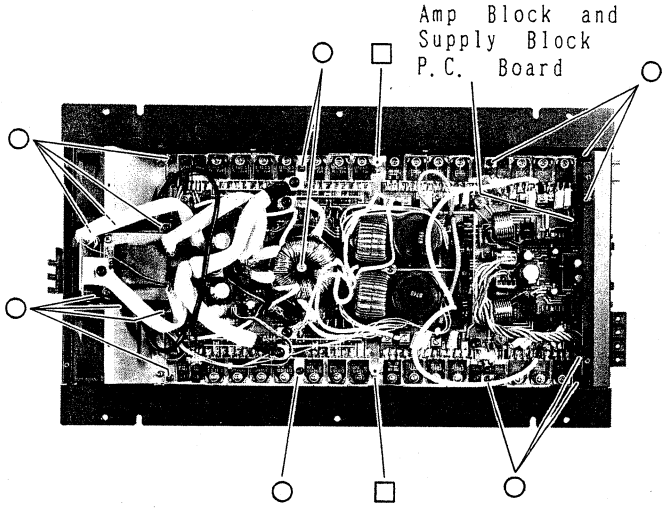


Figure 5

(2) After removal three fuses, remove four screws marked "△" and eight hooks as shown in Figure 6.

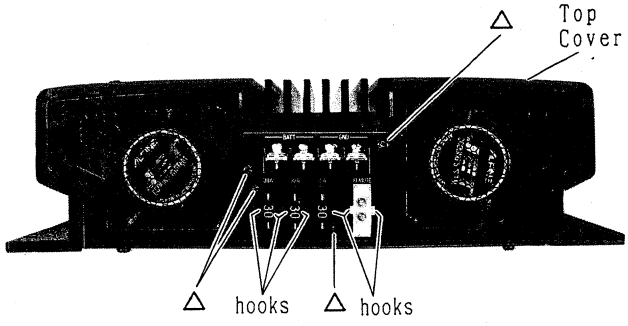


Figure 6

(3) Remore seven screws marked "×" as shown in Figure 7.

(4) Amp Block P.C. Board and Supply Block P.C. Board with the Heatsink and RCA P.C. Board and Fuse P.C. Board and Speaker P.C. Board and Anti-Rev P.C. Board and Pro P.C. Board and Fuse Terminal P.C. Board can be removed completely.

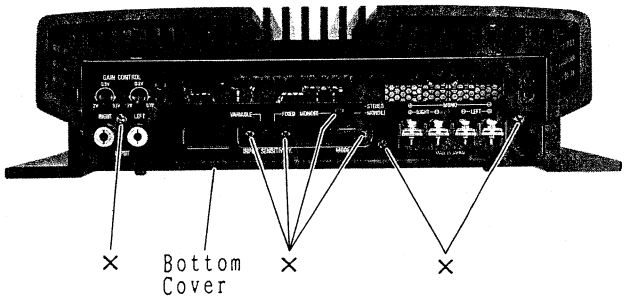


Figure 7

Adjustment Procedures

- Power supply Voltage Adjustment

  (1) Connections

  (2) Adjustment Procedures

  Adjust solid-state variable resistor VR601 to obtain 104 ± 0.5V (between T.P.5 and T.P.6) on the DC voltmeter.

- Idle Current Adjustment

  (1) Connections

  (2) Adjustment Procedures

  Adjust the solid-state variable resistor VR501 to obtain 4 ± 0.5mV (between T.P.1 and T.P.3) on the DC voltmeter. In the same manner, adjust the VR502 to also obtain 4 ± 0.5mV (between T.P.2 and T.P.4) on the DC voltmeter.

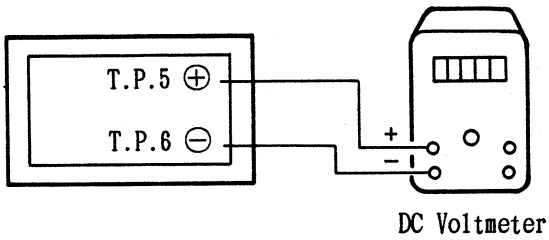


Figure 8

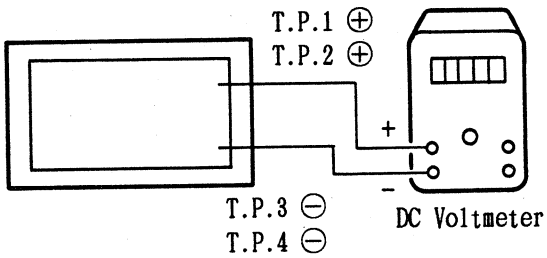


Figure 9

Adjustment Locations

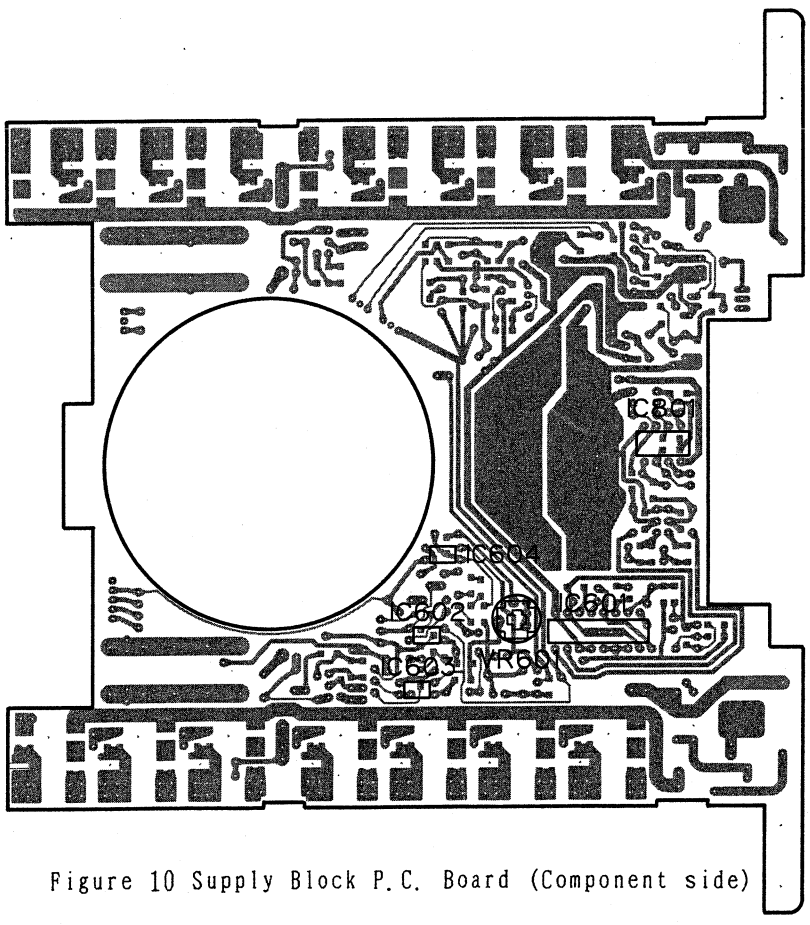


Figure 10 Supply Block P.C. Board (Component side)

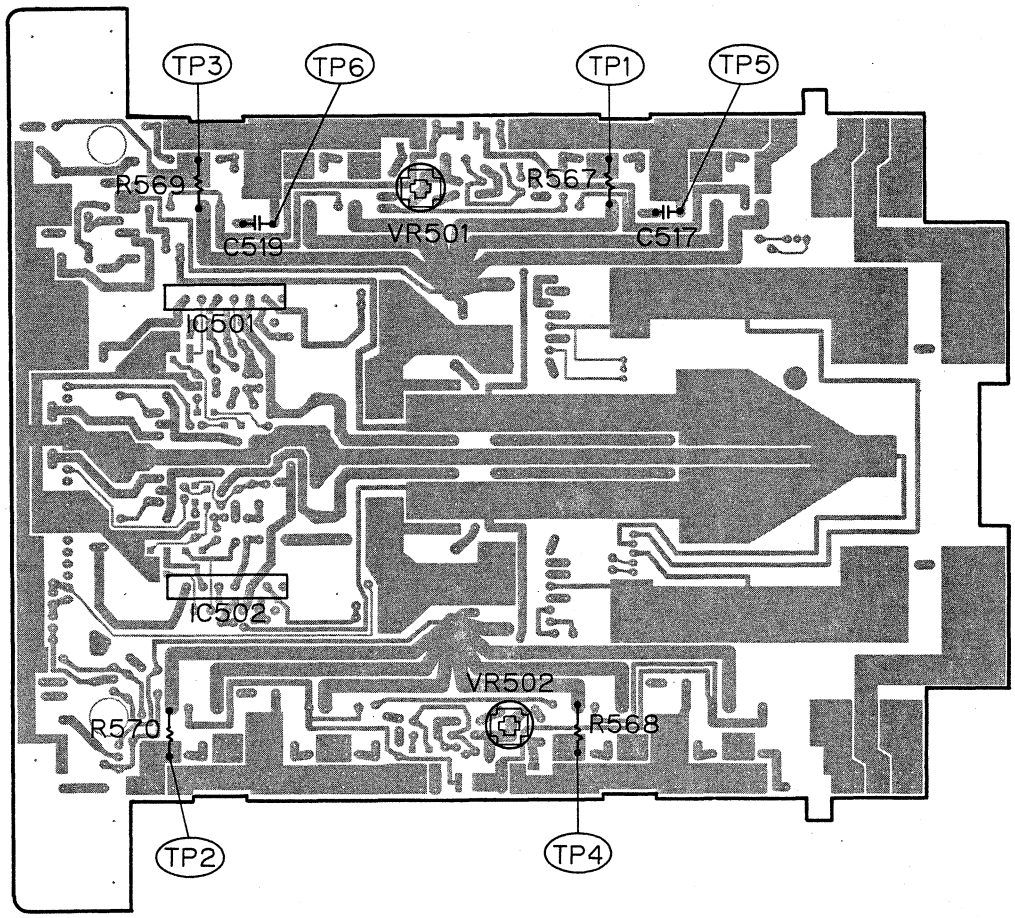
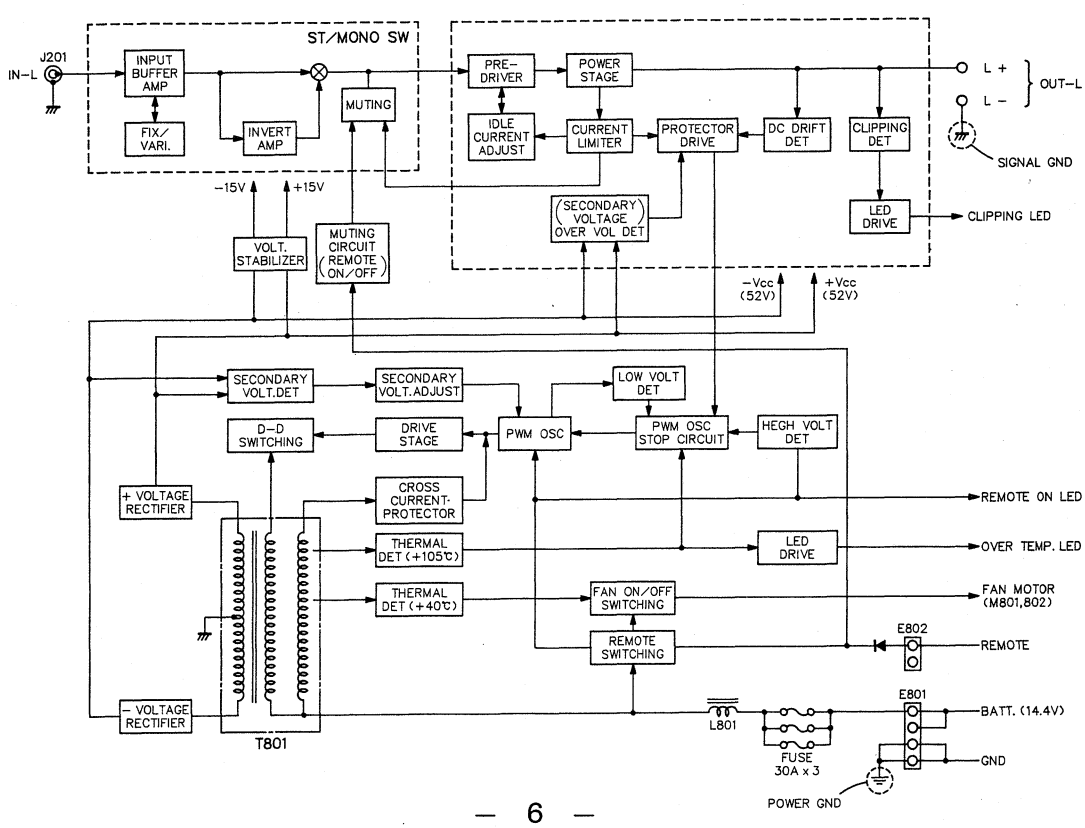


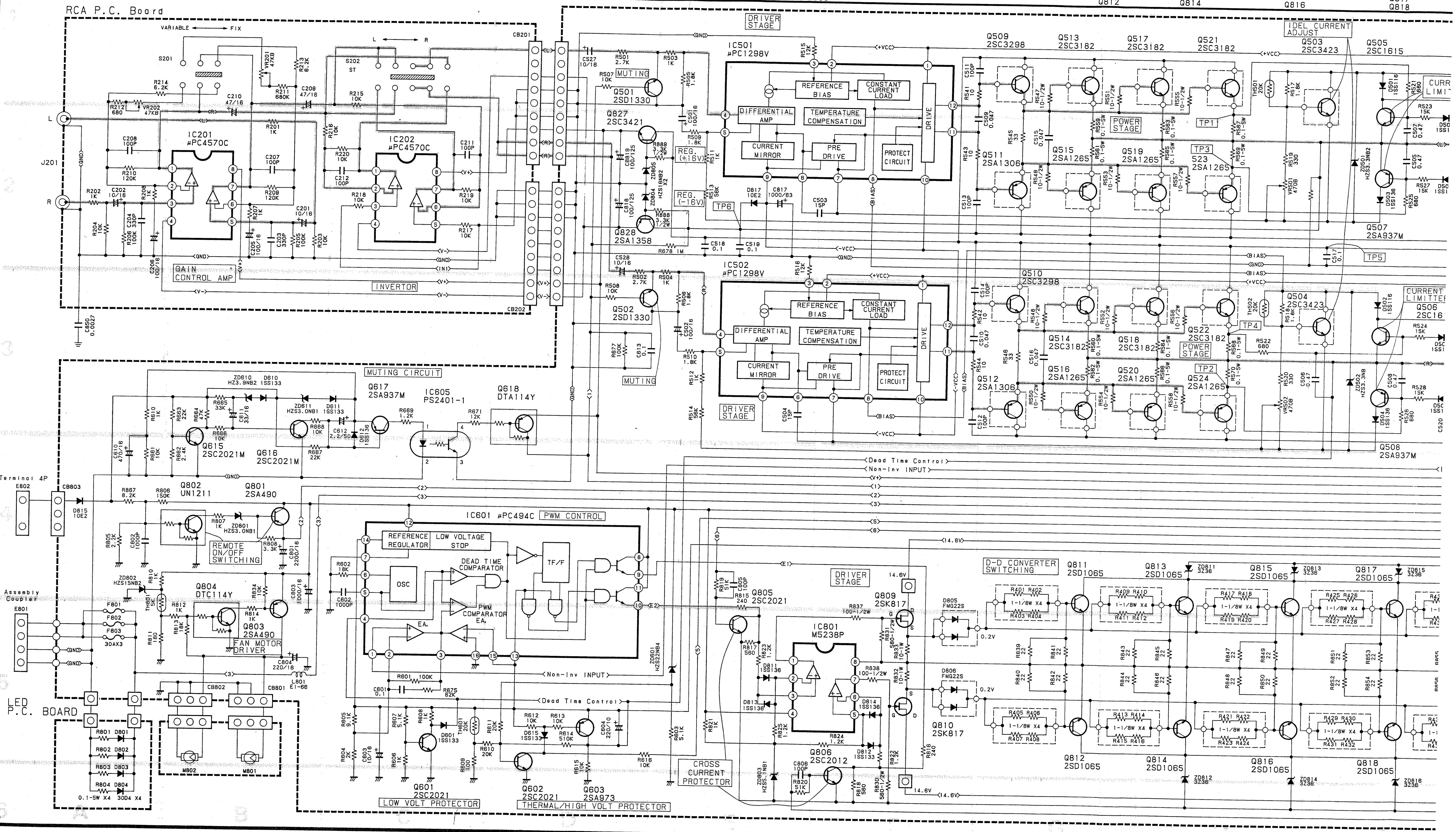
Figure 11 Amp Block P.C.Board (Component side)

Block Diagram

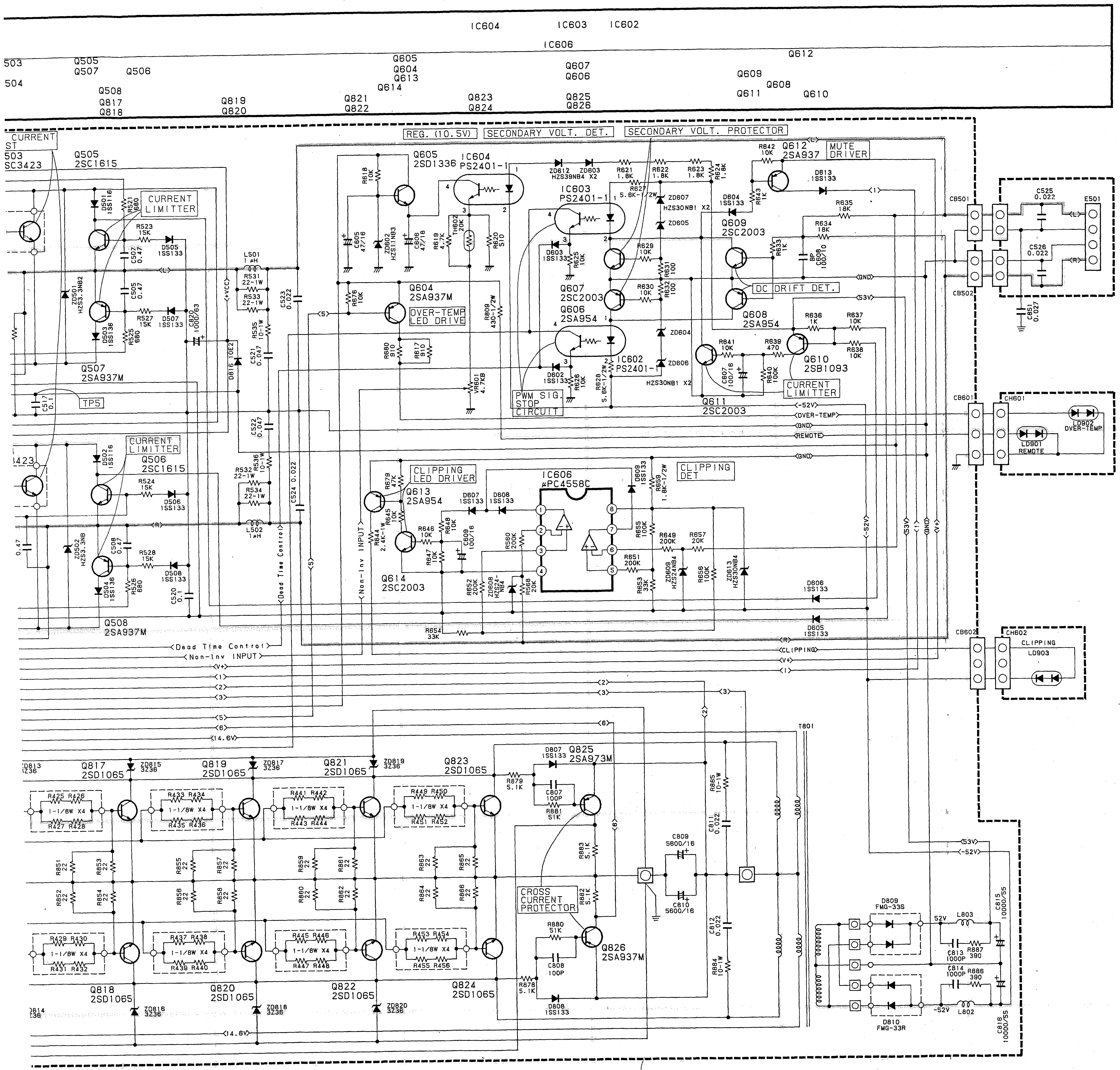


Schematic Diagrm

IC'S	IC201 IC202 IC605 IC601 IC501 IC502 IC801
TRANSISTORS (Q)	Q615 Q802 Q804 Q616 Q801 Q803 Q617 Q601 Q618 Q602 Q603 Q501 Q827 Q828 Q502 Q805 Q806 Q809 Q810 Q509 Q511 Q512 Q510 Q513 Q515 Q514 Q516 Q811 Q812 Q517 Q519 Q518 Q520 Q813 Q814 Q521 Q523 Q522 Q524 Q815 Q816 Q503 Q504 Q505 Q507 Q506 Q508 Q817 Q818



RCA P.C. Board
VARIABLE FIX
S201
S202 ST
J201
L
R
IC201 μPC4570C
IC202 μPC4570C
GAIN CONTROL AMP
INVERTOR
CB201
CB202
C850 0.0027
DRIVER STAGE
IC501 μPC1298V
IC502 μPC1298V
REFERENCE BIAS
CONSTANT CURRENT LOAD
DIFFERENTIAL AMP
TEMPERATURE COMPENSATION
CURRENT MIRROR
PRE DRIVE
PROTECT CIRCUIT
DRIVE
Q501 2SD1330
Q502 2SD1330
Q827 2SC3421
Q828 2SA1358
MUTING
REG. (+16V)
REG. (-16V)
TP6
Q509 2SC3298
Q510 2SC3298
Q511 2SA1306
Q512 2SA1306
Q513 2SC3182
Q514 2SC3182
Q515 2SA1265
Q516 2SA1265
Q517 2SC3182
Q518 2SC3182
Q519 2SA1265
Q520 2SA1265
Q521 2SC3182
Q522 2SC3182
523 2SA1265
Q524 2SA1265
POWER STAGE
TP1
TP2
TP3
TP4
TP5
IDEL CURRENT ADJUST
Q503 2SC3423
Q504 2SC3423
Q505 2SC1615
Q506 2SC16
Q507 2SA937M
Q508 2SA937M
CURRENT LIMITTER
MUTING CIRCUIT
Q615 2SC2021M
Q616 2SC2021M
Q617 2SA937M
IC605 PS2401-1
Q618 DTA114Y
Terminal 4P
E802
CB803
D815 10E2
Q802 UN1211
Q801 2SA490
REMOTE ON/OFF SWITCHING
Assembly Coupler
E801
F801
F802
F803 30AX3
Q804 DTC114Y
Q803 2SA490
FAN MOTOR DRIVER
L801 EI-66
CB802
CB801
LED P.C. BOARD
0.1-5W X4
30D4 X4
M802
M801
IC601 μPC494C
PWM CONTROL
REFERENCE REGULATOR
LOW VOLTAGE STOP
DEAD TIME COMPARATOR
PWM COMPARATOR
OSC
TF/F
EA.
Dead Time Control
Non-Inv INPUT
Q601 2SC2021
LOW VOLT PROTECTOR
Q602 2SC2021
Q603 2SA973
THERMAL/HIGH VOLT PROTECTOR
CROSS CURRENT PROTECTOR
Q805 2SC2021
Q806 2SC2012
IC801 M5238P
Q809 2SK817
Q810 2SK817
D805 FMG22S
D806 FMG22S
14.6V
0.2V
D-D CONVERTER SWITCHING
Q811 2SD1065
Q812 2SD1065
Q813 2SD1065
Q814 2SD1065
Q815 2SD1065
Q816 2SD1065
Q817 2SD1065
Q818 2SD1065
1-1/8W X4
ZD811 3Z36
ZD812 3Z36
ZD813 3Z36
ZD814 3Z36
ZD815 3Z36
ZD816 3Z36



NOTE
1. All resistance values are in ohms. K=1,000 M=1,000,000
2. All capacitance values are in microfarads. $P=\frac{1}{1,000,000}$

Voltage Measuring Conditions
1. Power Supply Voltage: DC14.4V
2. Measuring Meter: Digital Voltmeters
3. Measuring Point Reference: Between Ground
4. Measuring Condition: No Signal Input

	E	C	B
Q501	0.9mV	0.1mV	-4.6V
Q502	1mV	0.1mV	-4.6V
Q503	-1.7V	1V	-1.7V
Q504	-1.8V	1V	1.8V
Q505	-26.6mV	52.6V	-23.2mV
Q506	-29.6mV	52.51V	-25.1mV
Q507	-26.6mV	-1.7V	-30.7mV
Q508	-29.6mV	1.8V	-31.2mV
Q509	0.5V	53V	1.1V
Q510	0.5V	53V	1.1V
Q511	-0.6V	-52.2V	-1.2V
Q512	-0.6V	-52.2V	-1.2V
Q513	-21.6mV	53V	0.5V
Q514	-27.6mV	53V	0.5V
Q515	-32.4mV	-52.2V	-0.6V
Q516	-33.5mV	-52.2V	-0.6V
Q517	-22.1mV	53V	0.5V
Q518	-26.7mV	53V	0.5V
Q519	-32.1mV	-52.2V	-0.6V
Q520	-33.1mV	-52.2V	-0.6V
Q521	-21mV	53V	0.5V
Q522	-24.4mV	53V	0.5V
Q523	-32.6mV	-52.2V	-0.6V
Q524	-32.9mV	-52.2V	-0.6V

	E	C	B
Q601	0.4mV	45.6mV	0.7V
Q602	0.2mV	14.3V	22.8mV
Q603	5.1V	16mV	5.1V
Q604	14.2V	3.6V	14.2V
Q605	10.5V	14.4V	11.1V
Q606	-0.7mV	-51.1V	0V
Q607	-0.7mV	52V	0V
Q608	-0.7mV	-51.1V	-29mV
Q609	-0.7mV	52V	-29mV
Q610	53V	-0.7mV	52.8V
Q611	-0.7mV	52V	-0.7mV
Q612	15.9V	-4.5V	15.9V
Q613	-0.4mV	-49.1V	-1.1mV
Q614	-51.9V	-1.1mV	51.6V
Q615	1.3mV	6.5mV	0.7V
Q616	1.3mV	11.3V	5.9mV
Q617	10.9V	-0.9V	11.3V
Q618	15.9V	-4.7V	15.8V

	E	C	B
Q801	14.4V	14.2V	13.6V
Q802	0V	11.1mV	2.8V
Q805	0V	0.8V	0.1V
Q806	0V	0.8V	0.1V
Q811	0V	14.6V	0.2V
Q812	0V	14.6V	0.2V
Q813	0V	14.6V	0.2V
Q814	0V	14.6V	0.2V
Q815	0V	14.6V	0.2V
Q816	0V	14.6V	0.2V
Q817	0V	14.6V	0.2V
Q818	0V	14.6V	0.2V
Q819	0V	14.6V	0.2V
Q820	0V	14.6V	0.2V
Q821	0V	14.6V	0.2V
Q822	0V	14.6V	0.2V
Q823	0V	14.6V	0.2V
Q824	0V	14.6V	0.2V
Q825	14.4V	5.3V	15.3V
Q826	14.4V	5.7V	15.3V
Q827	16V	53V	16.5V
Q828	-16V	-52V	-16.5V

AT M801, 802 ON/OFF

		E	C	B
Q803	OFF	14.4V	41.3mV	14.3V
	ON	14.2V	14.1V	13.4V
Q804	OFF	0.1mV	14.3V	0.6V
	ON	3.3mV	136.7mV	13.9V

	S	D	G
Q809	0.2V	14.6V	1.1V
Q810	0.2V	14.6V	

	IC201	IC202	IC501	IC502	IC601	IC602	IC603	IC604	IC605	IC606	IC801
1	13.1mV	0V	52.4V	52.4V	1V	-51.1V	52.7V		-1V	-50.6V	1.3V
2	13.9mV	5mV	52.4V	52.4V	1V	-51.9V	52V	-52V	1.3mV	-26.9V	3.3V
3	13.8mV	5.2mV	46.1V	46.4V	3.1V	-1.4mV	-0.1mV	3.4V	-0.7mV	-43.2V	2.7V
4	-15.9mV	-15.9mV	1.2mV	1.1mV	0V	5.1V	5.1V	10.5V	15.8V	-51.9V	14.2V
5	13.2mV	4.8mV	8.5mV	9mV	1.9V					-43.1V	3.3V
6	13.4mV	4.8mV	-49.4V	-49.5V	3.9V					-26.8V	2.7V
7	12.6mV	-0.5mV	-1.7V	-1.8V	0V					-50.6V	1.6V
8	15.9mV	15.9mV	1V	1V	14V					-20.2V	0V
9			-50.9V	-50.9V	1.1V						
10			-50.9V	-50.9V	1.1V						
11			-1.1V	-1.1V	14V						
12			1V	1V	14V						
13					5.1V						
14					5.1V						
15					5.1V						
16					0V						

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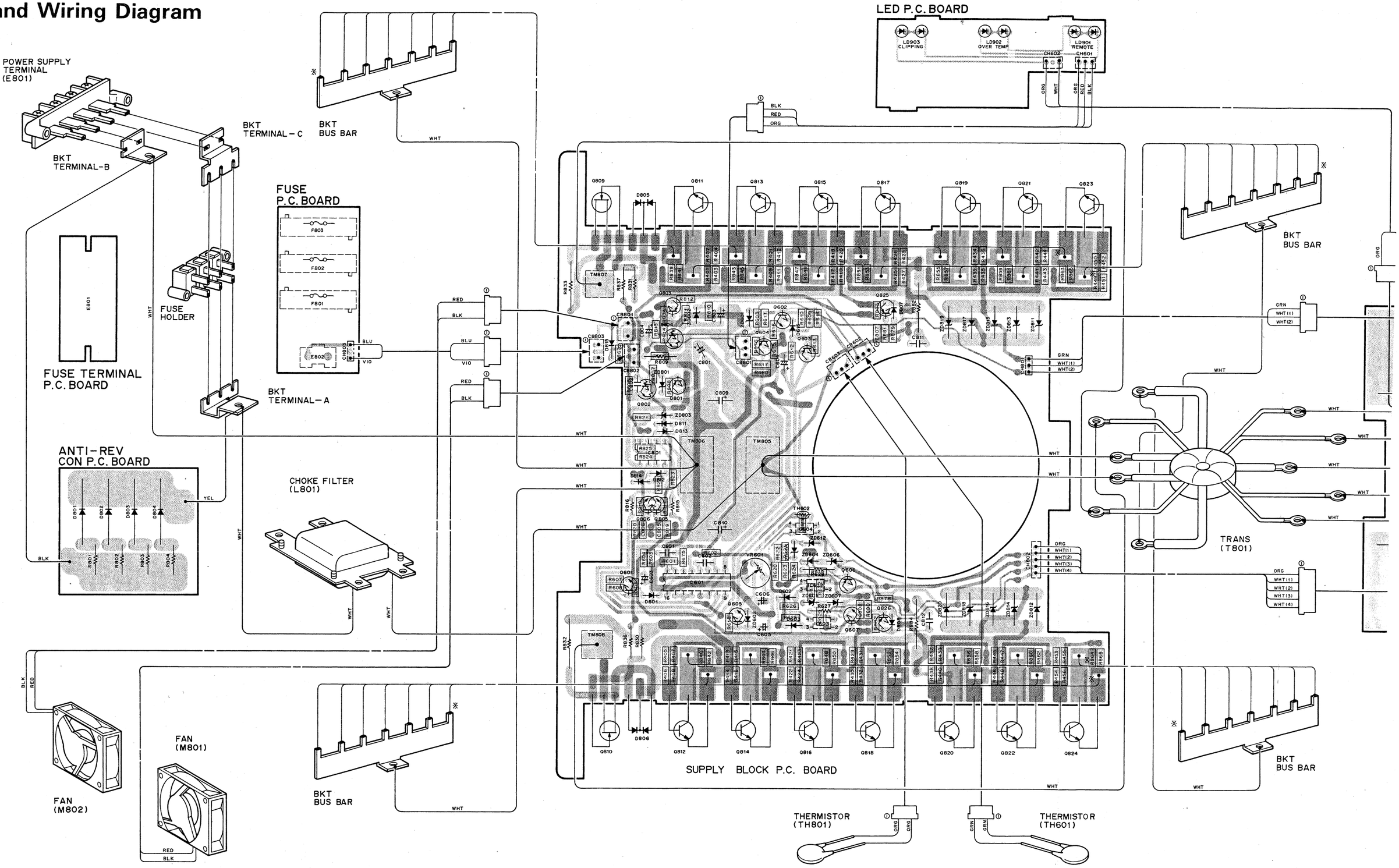
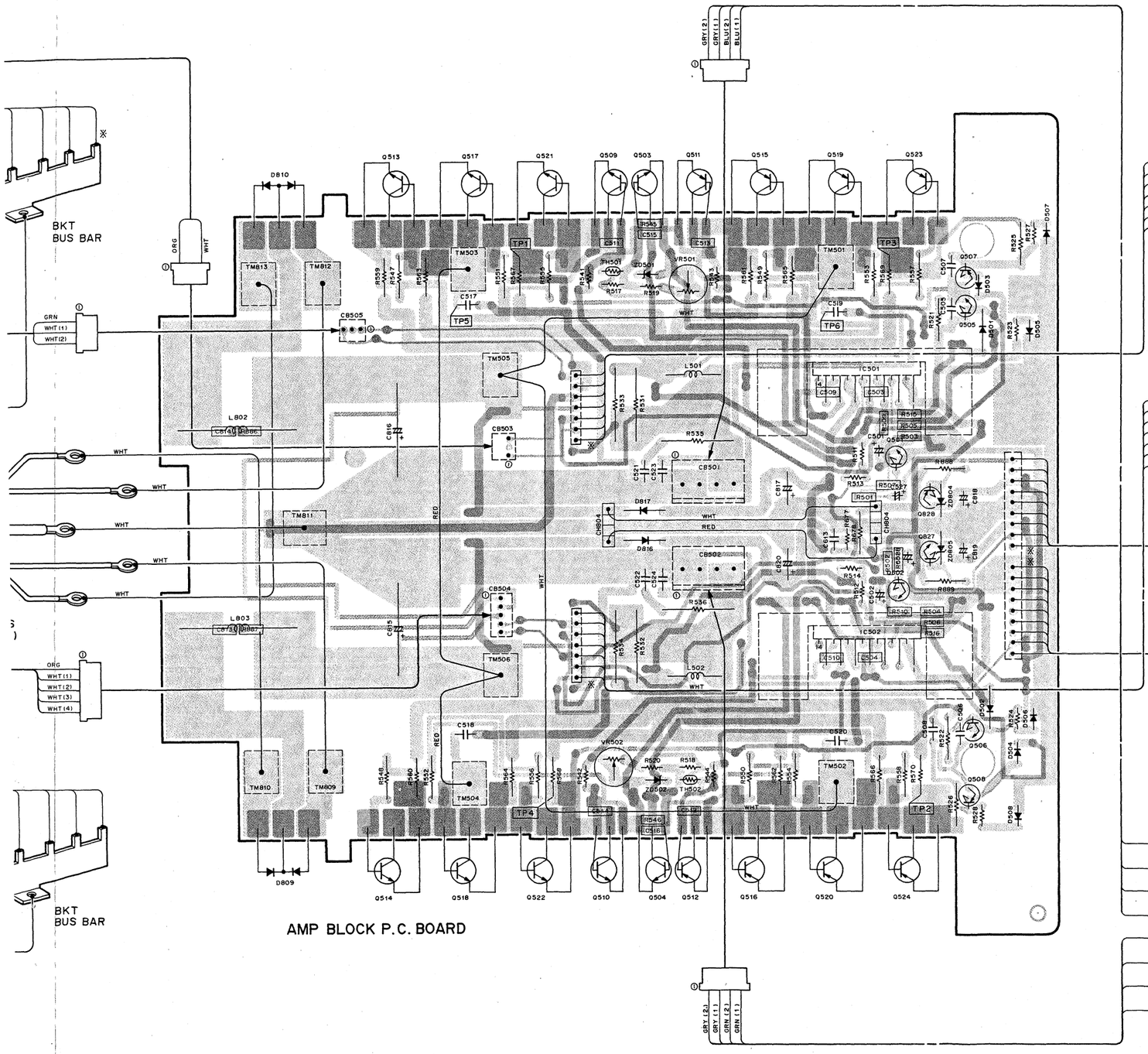
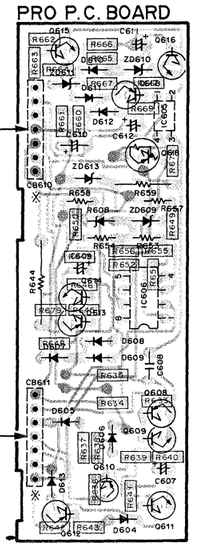
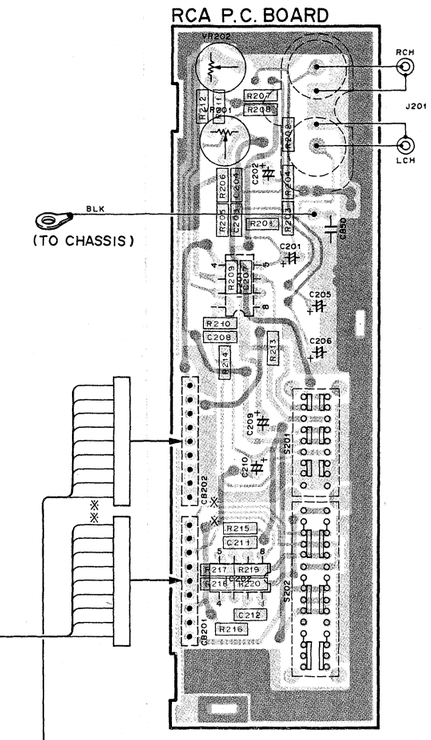
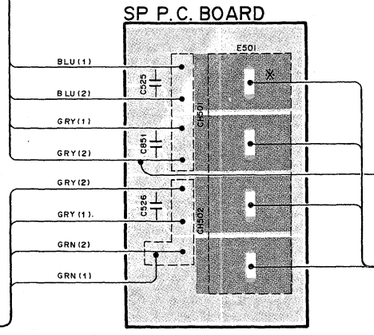
Parts Lagout on P.C. Boards and Wiring Diagram

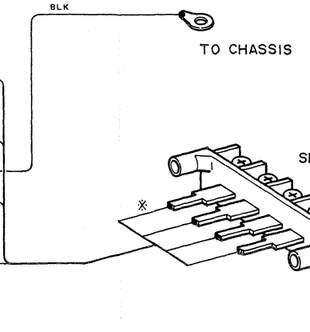












BLU.....Blue
GRN.....Green
BLK.....Black
GRY.....Gray
WHT.....White
RED.....Red
YEL.....Yellow
VIO.....Violet
BLK/WHT..Black
SHLD.....Shield

Electrical Parts List

Resistor:Carbon resistors under 1/8 watts are not mentioned in the parts list, please confirm them by schematic diagram.
Capacitor: μF=microfarads, pF=Picofarads

Abbreviations

CAP.=Capacitor	CER.=Ceramic
CP.=Chip	LED.=Light Emitting Diode
ELY.=Electrolytic	Mo.=Metal Oxide Film
MIC.=Mica	PP.=Polypropylene
MYL.=Mylay	ZEN.=Zener
SOL.=Solid	

Symbol No.	Part No.	Description
	Supply Block P.C. Board	
	IC's	
IC601	51T70759F01	μPC494C
IC602	51T70760F01	PS2401-1
IC603	51T70760F01	PS2401-1
IC604	51T70760F01	PS2401-1
IC801	51T80136F01	M5238P
	Transistors	
Q601	48T51091F01	2SC2021
Q602	48T51091F01	2SC2021
Q603	48T63086F01	2SA937M
Q604	48T63086F01	2SA937M
Q605	48T57337F01	2SD1330
Q606	48T94557F02	2SA954
Q607	48T94563F02	2SC2003
Q801	48T44652P01	2SA490
Q802	48T62540F01	UN1211
Q803	48T44652P01	2SA490
Q804	48T62963F06	DTC114Y
Q805	48T51091F01	2SC2021
Q806	48T51091F01	2SC2021
Q825	48T63086F01	2SA937M
Q826	48T63086F01	2SA937M
	Diods	
D601	48T58583F01	1SS176
or	48T68828F01	1SS133
D602	48T58583F01	1SS176
or	48T68828F01	1SS133
D603	48T58583F01	1SS176
or	48T68828F01	1SS133
D615	48T58583F01	1SS176
or	48T68828F01	1SS133
D807	48T58583F01	1SS176
or	48T68828F01	1SS133
D808	48T58583F01	1SS176
or	48T68828F01	1SS133
D811	48T70933F01	1SS136
D812	48T70933F01	1SS136
D813	48T70933F01	1SS136
D814	48T70933F01	1SS136
D815	48C40235G02	10E2
ZD601	48T90517F71	ZEN, HZS22NB4
ZD602	48T90517F49	ZEN, HZS11NB3
ZD603	48T90517F95	ZEN, HZS39NB4
ZD604	48T90517F80	ZEN, HZS30NB1
ZD605	48T90517F80	ZEN, HZS30NB1
ZD606	48T90517F80	ZEN, HZS30NB1
ZD607	48T90517F80	ZEN, HZS30NB1
ZD612	48T90517F95	ZEN, HZS39NB4
ZD801	48T90517F09	ZEN, HZS3.0NB1
ZD802	48T90517F57	ZEN, HZS15NB2
ZD803	48T90517F23	ZEN, HZS5.1NB1
ZD811	48T95160F01	ZEN, 3Z36
ZD812	48T95160F01	ZEN, 3Z36
ZD813	48T95160F01	ZEN, 3Z36
ZD814	48T95160F01	ZEN, 3Z36
ZD815	48T95160F01	ZEN, 3Z36
ZD816	48T95160F01	ZEN, 3Z36
ZD817	48T95160F01	ZEN, 3Z36
ZD818	48T95160F01	ZEN, 3Z36
ZD819	48T95160F01	ZEN, 3Z36
ZD820	48T95160F01	ZEN, 3Z36
	Thermisteur	
TH602	48T60670F01	20K ohm
	Capacitors	
C525	08T57851F05	PP, 0.022μF
C526	08T57851F05	PP, 0.022μF
C601	08T57705F79	MYL, 0.1μF
C602	08T57705F55	MYL, 1000pF
C603	23T61512F08	ELY, 10 μF/16V

Symbol No.	Part No.	Description		
C804	23S40657F09	ELY, 220μF/10V		
C805	23T61513F14	ELY, 47 μF/16V		
C806	23T61513F14	ELY, 47 μF/16V		
C801	23T83923F16	ELY, 2200 μF/16V		
C802	08S85480F49	CER, 1000pF		
C803	23T83923F15	ELY, 1000 μF/16V		
C804	23C44780P23	ELY, 220μF/16V		
C805	08S53332F23	CP, 100pF		
C806	08S53332F23	CP, 100pF		
C807	08S53332F23	CP, 100pF		
C808	08S53332F23	CP, 100pF		
C809	23T95137F51	ELY, 5600 μF/16V		
C810	23T95137F51	ELY, 5600 μF/16V		
C811	08T57851F05	PF, 0.022μF		
C812	08T57851F05	PF, 0.022μF		
C851	08T57851F06	TF, 0.027μF		
Resistors				
R401	06S53331F41	CP, 1K ohm 1/8W		
R402	06S53331F41	CP, 1K ohm 1/8W		
R403	06S53331F41	CP, 1K ohm 1/8W		
R404	06S53331F41	CP, 1K ohm 1/8W		
R405	06S53331F41	CP, 1K ohm 1/8W		
R406	06S53331F41	CP, 1K ohm 1/8W		
R407	06S53331F41	CP, 1K ohm 1/8W		
R408	06S53331F41	CP, 1K ohm 1/8W		
R409	06S53331F41	CP, 1K ohm 1/8W		
R410	06S53331F41	CP, 1K ohm 1/8W		
R411	06S53331F41	CP, 1K ohm 1/8W		
R412	06S53331F41	CP, 1K ohm 1/8W		
R413	06S53331F41	CP, 1K ohm 1/8W		
R414	06S53331F41	CP, 1K ohm 1/8W		
R415	06S53331F41	CP, 1K ohm 1/8W		
R416	06S53331F41	CP, 1K ohm 1/8W		
R417	06S53331F41	CP, 1K ohm 1/8W		
R418	06S53331F41	CP, 1K ohm 1/8W		
R419	06S53331F41	CP, 1K ohm 1/8W		
R420	06S53331F41	CP, 1K ohm 1/8W		
R421	06S53331F41	CP, 1K ohm 1/8W		
R422	06S53331F41	CP, 1K ohm 1/8W		
R423	06S53331F41	CP, 1K ohm 1/8W		
R424	06S53331F41	CP, 1K ohm 1/8W		
R425	06S53331F41	CP, 1K ohm 1/8W		

Symbol No.	Part No.	Description		
R426	06S53331F41	CP, 1K ohm 1/8W		
R427	06S53331F41	CP, 1K ohm 1/8W		
R428	06S53331F41	CP, 1K ohm 1/8W		
R429	06S53331F41	CP, 1K ohm 1/8W		
R430	06S53331F41	CP, 1K ohm 1/8W		
R431	06S53331F41	CP, 1K ohm 1/8W		
R432	06S53331F41	CP, 1K ohm 1/8W		
R433	06S53331F41	CP, 1K ohm 1/8W		
R434	06S53331F41	CP, 1K ohm 1/8W		
R435	06S53331F41	CP, 1K ohm 1/8W		
R436	06S53331F41	CP, 1K ohm 1/8W		
R437	06S53331F41	CP, 1K ohm 1/8W		
R438	06S53331F41	CP, 1K ohm 1/8W		
R439	06S53331F41	CP, 1K ohm 1/8W		
R440	06S53331F41	CP, 1K ohm 1/8W		
R441	06S53331F41	CP, 1K ohm 1/8W		
R442	06S53331F41	CP, 1K ohm 1/8W		
R443	06S53331F41	CP, 1K ohm 1/8W		
R444	06S53331F41	CP, 1K ohm 1/8W		
R445	06S53331F41	CP, 1K ohm 1/8W		
R446	06S53331F41	CP, 1K ohm 1/8W		
R447	06S53331F41	CP, 1K ohm 1/8W		
R448	06S53331F41	CP, 1K ohm 1/8W		
R449	06S53331F41	CP, 1K ohm 1/8W		
R450	06S53331F41	CP, 1K ohm 1/8W		
R451	06S53331F41	CP, 1K ohm 1/8W		
R452	06S53331F41	CP, 1K ohm 1/8W		
R453	06S53331F41	CP, 1K ohm 1/8W		
R454	06S53331F41	CP, 1K ohm 1/8W		
R455	06S53331F41	CP, 1K ohm 1/8W		
R456	06S53331F41	CP, 1K ohm 1/8W		
R601	06S53331F02	CP, 100K ohm 1/8W		
R602	06S53331F83	CP, 18K ohm 1/8W		
R603	06T70072P70	CP, 5.1K ohm 1/4W		
R604	06S53330F60	CP, 2K ohm 1/8W		
R605	06S53330F76	CP, 9.1K ohm 1/8W		
R606	06S53330F53	CP, 1K ohm 1/8W		
R607	06S53330F70	CP, 5.1K ohm 1/8W		
R608	06S53330F53	CP, 1K ohm 1/8W		
R609	06S53330F29	CP, 100 ohm 1/8W		
R610	06S53330F84	CP, 20K ohm 1/8W		
R611	06S53330F84	CP, 20K ohm 1/8W		
R612	06S53330F77	CP, 10K ohm 1/8W		
R613	06S53330F77	CP, 10K ohm 1/8W		
R614	06S53331F19	CP, 510K ohm 1/8W		

Symbol No.	Part No.	Description		
R615	06S53330F77	CP, 10K ohm 1/8W		
R616	06S53330F77	CP, 10K ohm 1/8W		
R617	06T70072F52	CP, 910 ohm 1/4W		
R618	06S53330F77	CP, 10K ohm 1/8W		
R619	06S53330F69	CP, 4.7K ohm 1/8W		
R620	06S53330F46	CP, 510 ohm 1/8W		
R621	06T70072F59	CP, 1.8K ohm 1/4W		
R622	06T70072F59	CP, 1.8K ohm 1/4W		
R623	06T70072F59	CP, 1.8K ohm 1/4W		
R624	06T70072F59	CP, 1.8K ohm 1/4W		
R625	06S53330F77	CP, 10K ohm 1/8W		
R626	06S53330F77	CP, 10K ohm 1/8W		
R627	06T67581F41	C.F, 5.6K ohm 1/2W		
R628	06T67581F41	C.F, 5.6K ohm 1/2W		
R629	06S53330F77	CP, 10K ohm 1/8W		
R630	06S53330F77	CP, 10K ohm 1/8W		
R631	06S53330F29	CP, 100 ohm 1/8W		
R632	06S53330F29	CP, 100 ohm 1/8W		
R675	06S53330F96	CP, 62K ohm 1/8W		
R676	06S53330F77	CP, 10K ohm 1/8W		
R680	06T70072F52	CP, 910 ohm 1/4W		
R805	06S53330F61	CP, 2.2K ohm 1/8W		
R806	06S53331F06	CP, 150K ohm 1/8W		
R807	06S53330F53	CP, 1K ohm 1/8W		
R808	06S53330F65	CP, 3.3K ohm 1/8W		
R809	06T67581F70	C.F, 430 ohm 1/2W		
R810	06S53330F53	CP, 1K ohm 1/8W		
R811	06S53330F35	CP, 180 ohm 1/8W		
R812	06S53330F53	CP, 1K ohm 1/8W		
R813	06S53330F83	CP, 18K ohm 1/8W		
R814	06S53330F53	CP, 1K ohm 1/8W		
R817	06S53330F47	CP, 560 ohm 1/8W		
R818	06S53330F47	CP, 560 ohm 1/8W		
R819	06S53330F94	CP, 51K ohm 1/8W		
R820	06S53330F94	CP, 51K ohm 1/8W		
R821	06T70072F53	CP, 1K ohm 1/4W		
R822	06S53330F55	CP, 1.2K ohm 1/8W		
R823	06S53330F55	CP, 1.2K ohm 1/8W		
R824	06S53330F55	CP, 1.2K ohm 1/8W		
R825	06S53330F55	CP, 1.2K ohm 1/8W		
R830	06T67581F29	C.F, 560 ohm 1/2W		
R831	06T67581F29	C.F, 560 ohm 1/2W		
R832	06T55177F17	MF, 10 ohm 1W		
R833	06T55177F17	MF, 10 ohm 1W		
R834	06S53330F77	CP, 10K ohm 1/8W		

Symbol No.	Part No.	Description		
R836	06T67581F20	C.F, 100 ohm 1/2W		
R837	06T67581F20	C.F, 100 ohm 1/2W		
R839	06T70072F13	CP, 22 ohm 1/4W		
R840	06T70072F13	CP, 22 ohm 1/4W		
R841	06T70072F13	CP, 22 ohm 1/4W		
R842	06T70072F13	CP, 22 ohm 1/4W		
R843	06T70072F13	CP, 22 ohm 1/4W		
R844	06T70072F13	CP, 22 ohm 1/4W		
R845	06T70072F13	CP, 22 ohm 1/4W		
R846	06T70072F13	CP, 22 ohm 1/4W		
R847	06T70072F13	CP, 22 ohm 1/4W		
R848	06T70072F13	CP, 22 ohm 1/4W		
R849	06T70072F13	CP, 22 ohm 1/4W		
R850	06T70072F13	CP, 22 ohm 1/4W		
R851	06T70072F13	CP, 22 ohm 1/4W		
R852	06T70072F13	CP, 22 ohm 1/4W		
R853	06T70072F13	CP, 22 ohm 1/4W		
R854	06T70072F13	CP, 22 ohm 1/4W		
R855	06T70072F13	CP, 22 ohm 1/4W		
R856	06T70072F13	CP, 22 ohm 1/4W		
R857	06T70072F13	CP, 22 ohm 1/4W		
R858	06T70072F13	CP, 22 ohm 1/4W		
R859	06T70072F13	CP, 22 ohm 1/4W		
R860	06T70072F13	CP, 22 ohm 1/4W		
R861	06T70072F13	CP, 22 ohm 1/4W		
R862	06T70072F13	CP, 22 ohm 1/4W		
R863	06T70072F13	CP, 22 ohm 1/4W		
R864	06T70072F13	CP, 22 ohm 1/4W		
R865	06T70072F13	CP, 22 ohm 1/4W		
R866	06T70072F13	CP, 22 ohm 1/4W		
R867	06S53330F75	CP, 8.2K ohm 1/8W		
R878	06S53330F70	CP, 5.1K ohm 1/8W		
R879	06S53330F70	CP, 5.1K ohm 1/8W		
R880	06S53330F94	CP, 51K ohm 1/8W		
R881	06S53330F94	CP, 51K ohm 1/8W		
R882	06S53330F70	CP, 5.1K ohm 1/8W		
R883	06S53330F70	CP, 5.1K ohm 1/8W		
R884	06T55177F17	MF, 10 ohm 1W		
R885	06T55177F17	MF, 10 ohm 1W		
VR601	18B44064J02	SOL, Variable 4.7K ohm B		

Symbol No.	Part No.	Description		
		AMP Block P.C. BOARD		
Tramsistois				
Q501	48T57337F01	2SD1330		
Q502	48T57337F01	2SD1330		
Q505	48T81066F01	2SC1615		
Q506	48T81066F01	2SC1615		
Q507	48T63086F01	2SA937M		
Q508	48T63086F01	2SA937M		
Q827	48T69176F01	2SC3421		
Q828	48T69177F01	2SA1358		
Dliodes				
D501	48T94565F01	1SS116		
D502	48T94565F01	1SS116		
D503	48T70933F01	1SS136		
D504	48T70933F01	1SS136		
D505	48T58583F01	1SS176		
or	48T68828F01	1SS133		
D506	48T58583F01	1SS176		
or	48T68828F01	1SS133		
D507	48T58583F01	1SS176		
or	48T68828F01	1SS133		
D508	48T58583F01	1SS176		
or	48T68828F01	1SS133		
D816	48C40235G02	10E2		
D817	48C40235G02	10E2		
ZD501	48T15503W12	ZEN, HZS3.3NB2		
ZD502	48T15503W12	ZEN, HZS3.3NB2		
ZD804	48T90157F60	ZEN, HZS16NB2		
ZD805	48T90157F60	ZEN, HZS16NB2		
Coils				
L501	24T67517F03	Choke, 1μH		
L502	24T67517F03	Choke, 1μH		
L802	25T94612F01	Choke, Filter		
L803	25T94612F01	Choke, Filter		

Symbol No.	Part No.	Description		
Fhermisters				
TH501	48T60670F01	20K ohm		
TH502	48T60670F01	20K ohm		
Cupacitors				
C501	23T73862F09	ELY, 100μF/16V		
C502	23T73862F09	ELY, 100μF/16V		
C503	08S53332F13	CP, 15pF		
C504	08S53332F13	CP, 15pF		
C505	08T57851F21	TF, 0.47 μF		
C506	08T57851F21	TF, 0.47 μF		
C507	08T57851F21	TF, 0.47 μF		
C508	08T57851F21	TF, 0.47 μF		
C509	08S53332F55	CP, 0.047μF		
C510	08S53332F55	CP, 0.047μF		
C511	08S53332F23	CP, 100pF		
C512	08S53332F23	CP, 100pF		
C513	08S53332F23	CP, 100pF		
C514	08S53332F23	CP, 100pF		
C515	08S53332F55	CP, 0.047μF		
C516	08S53332F55	CP, 0.047μF		
C517	08T57851F13	TF, 0.1μF		
C518	08T57851F13	TF, 0.1μF		
C519	08T57851F13	TF, 0.1μF		
C520	08T57851F13	TF, 0.1μF		
C521	08T57851F09	TF, 0.047μF		
C522	08T57851F09	TF, 0.047μF		
C523	08T57851F05	PF, 0.022μF		
C524	08T57851F05	PF, 0.022μF		
C527	23T81584F09	ELY, 10 μF/16V		
C528	23T81584F09	ELY, 10 μF/16V		
C613	08T57851F13	TF, 0.1μF		
C813	08S53332F35	CP, 1000pF		
C814	08S53332F35	CP, 1000pF		
C815	23T94587F03	ELY, 10000μF/55V		
C816	23T94587F03	ELY, 10000μF/55V		
C817	23T83923F32	ELY, 1000 μF/63V		
C818	23S41198U35	ELY, 100μF/25V		
C819	23S41198U35	ELY, 100μF/25V		
C820	23T83923F32	ELY, 1000 μF/63V		

Symbol No.	Part No.	Description		
Resistor				
R501	06S53330F63	CP, 2.7K ohm 1/8W		
R502	06S53330F63	CP, 2.7K ohm 1/8W		
R503	06S53330F53	CP, 1K ohm 1/8W		
R504	06S53330F53	CP, 1K ohm 1/8W		
R505	06S53330F59	CP, 1.8K ohm 1/8W		
R506	06S53330F59	CP, 1.8K ohm 1/8W		
R507	06S53330F77	CP, 10K ohm 1/8W		
R508	06S53330F77	CP, 10K ohm 1/8W		
R509	06S53330F59	CP, 1.8K ohm 1/8W		
R510	06S53330F59	CP, 1.8K ohm 1/8W		
R515	06S53330F79	CP, 12K ohm 1/8W		
R516	06S53330F79	CP, 12K ohm 1/8W		
R531	06T55177F25	MF, 22 ohm 1W		
R532	06T55177F25	MF, 22 ohm 1W		
R533	06T55177F25	MF, 22 ohm 1W		
R534	06T55177F25	MF, 22 ohm 1W		
R535	06T55177F17	MF, 10 ohm 1W		
R536	06T55177F17	MF, 10 ohm 1W		
R545	06S53330F17	CP, 33 ohm 1/8W		
R546	06S53330F17	CP, 33 ohm 1/8W		
R547	06T67581F08	C.F 10 ohm 1/2W		
R548	06T67581F08	C.F 10 ohm 1/2W		
R549	06T67581F08	C.F 10 ohm 1/2W		
R550	06T67581F08	C.F 10 ohm 1/2W		
R551	06T67581F08	C.F 10 ohm 1/2W		
R552	06T67581F08	C.F 10 ohm 1/2W		
R553	06T67581F08	C.F 10 ohm 1/2W		
R554	06T67581F08	C.F 10 ohm 1/2W		
R555	06T67581F08	C.F 10 ohm 1/2W		
R556	06T67581F08	C.F 10 ohm 1/2W		
R557	06T67581F08	C.F 10 ohm 1/2W		
R558	06T67581F08	C.F 10 ohm 1/2W		
R559	06T71921F03	Cement 0.1 ohm 5W		
R560	06T71921F03	Cement 0.1 ohm 5W		
R561	06T71921F03	Cement 0.1 ohm 5W		
R562	06T71921F03	Cement 0.1 ohm 5W		
R563	06T71921F03	Cement 0.1 ohm 5W		
R564	06T71921F03	Cement 0.1 ohm 5W		
R565	06T71921F03	Cement 0.1 ohm 5W		
R566	06T71921F03	Cement 0.1 ohm 5W		
R567	06T71921F03	Cement 0.1 ohm 5W		
R568	06T71921F03	Cement 0.1 ohm 5W		
R569	06T71921F03	Cement 0.1 ohm 5W		
R570	06T71921F03	Cement 0.1 ohm 5W		
R886	06S53330F43	CP, 390 ohm 1/8W		

Symbol No.	Part No.	Description		
R887	06S53330F43	CP, 390 ohm 1/8W		
R888	06T67581F38	C.F 3.3K ohm 1/2W		
R889	06T67581F38	C.F 3.3K ohm 1/2W		
VR501	18B44064J01	SOL, Variable 470 ohm B 1/2W		
VR502	18B44064J01	SOL, Variable 470 ohm B 1/2W		
Pro P.C. Board				
IC's				
IC605	51T70760F01	PS2401-1		
IC606	51S43471U02	μPC4558C		
Transistors				
Q608	48T94557F02	2SA954		
Q609	48T94563F02	2SC2003		
Q610	48T94560F02	2SB1093		
Q611	48T94563F02	2SC2003		
Q612	48T63086F01	2SA937M		
Q613	48T94557F02	2SA954		
Q614	48T94563F02	2SC2003		
Q615	48T63082F05	2SC2021M		
Q616	48T63082F05	2SC2021M		
Q617	48T63086F01	2SA937M		
Q618	48T62962F06	DTA114Y		
Diods				
D604	48T58583F01	1SS176		
or	48T68828F01	1SS133		
D605	48T58583F01	1SS176		
or	48T68828F01	1SS133		
D606	48T58583F01	1SS176		
or	48T68828F01	1SS133		
D607	48T58583F01	1SS176		
or	48T68828F01	1SS133		
D608	48T58583F01	1SS176		
or	48T68828F01	1SS133		

Symbol No.	Part No.	Description		
D609	48T58583F01	1SS176		
or	48T68828F01	1SS133		
D610	48T58583F01	1SS176		
or	48T68828F01	1SS133		
D611	48T58583F01	1SS176		
or	48T68828F01	1SS133		
D612	48T70933F01	1SS136		
D613	48T58583F01	1SS176		
or	48T68828F01	1SS133		
ZD608	48T90517F75	ZEN, HZS24NB4		
ZD609	48T90517F75	ZEN, HZS24NB4		
ZD610	48T90517F16	ZEN, HZS3.9NB2		
ZD611	48T90517F09	ZEN, HZS3.0NB1		
ZD613	48T90517F83	ZEN, HZS30NB4		
Capacitors				
C607	23T73862F06	ELY, 100μF/16V		
C608	23S41192U68	ELY, (BP)100μF/10V		
C609	23T73862F06	ELY, 100μF/16V		
C610	23C42170G30	ELY, 470μF/16V		
C611	23T61513F13	ELY, 33 μF/16V		
C612	23T61512F26	ELY, 2.2μF/50V		
Resistors				
R633	06S53330F53	CP, 1K ohm 1/8W		
R634	06S53330F83	CP, 18K ohm 1/8W		
R635	06S53330F83	CP, 18K ohm 1/8W		
R636	06S53330F53	CP, 1K ohm 1/8W		
R637	06S53330F77	CP, 10K ohm 1/8W		
R638	06S53330F77	CP, 10K ohm 1/8W		
R639	06S53330F45	CP, 470 ohm 1/8W		
R640	06S53331F02	CP, 100K ohm 1/8W		
R641	06S53330F77	CP, 10K ohm 1/8W		
R642	06S53330F77	CP, 10K ohm 1/8W		
R643	06S53330F53	CP, 1K ohm 1/8W		
R644	06T55177F74	MF, 2.4K ohm 1W		
R645	06S53330F77	CP, 10K ohm 1/8		
R646	06S53330F77	CP, 10K ohm 1/8		
R647	06S53330F77	CP, 10K ohm 1/8		

Symbol No.	Part No.	Description		
R648	06S53330F77	CP, 10K ohm 1/8W		
R649	06S53331F09	CP, 200K ohm 1/8W		
R650	06S53331F09	CP, 200K ohm 1/8W		
R651	06S53331F09	CP, 200K ohm 1/8W		
R652	06S53331F09	CP, 200K ohm 1/8W		
R655	06S53331F02	CP, 100K ohm 1/8W		
R656	06S53331F02	CP, 100K ohm 1/8W		
R659	06T67581F35	C.F 1.8K ohm 1/2W		
R660	06S53330F53	CP, 1K ohm 1/8W		
R661	06S53330F77	CP, 10K ohm 1/8W		
R662	06S53330F62	CP, 2.4K ohm 1/8W		
R663	06S53330F85	CP, 22K ohm 1/8W		
R664	06S53330F93	CP, 47K ohm 1/8W		
R665	06S53330F89	CP, 33K ohm 1/8W		
R666	06S53330F77	CP, 10K ohm 1/8W		
R667	06S53330F85	CP, 22K ohm 1/8W		
R668	06S53330F77	CP, 10K ohm 1/8W		
R669	06S53330F55	CP, 1.2K ohm 1/8W		
R671	06S53330F79	CP, 12K ohm 1/8W		
R679	06S53330F93	CP, 47K ohm 1/8W		
RCA P.C. Board				
IC's				
IC201	51T83403F01	μPC4570C		
IC202	51T83403F01	μPC4570C		
Jack				
J201	09T70753F07	RCA 2P Gold		
Switches				
S201	40T73273F01	Slide, SSA-062(VARIABLE/FIX)		
S202	40T73274F01	Slide, SSA-063(ST)		

Symbol No.	Part No.	Description		
Capacitors				
C201	23T81584F09	ELY, 10 μF/16V		
C202	23T81584F09	ELY, 10 μF/16V		
C203	08S53332F29	CP, 330pF		
C204	08S53332F29	CP, 330pF		
C205	23T81584F13	ELY, 100μF/16V		
C206	23T81584F13	ELY, 100μF/16V		
C207	08S53332F23	CP, 100pF		
C208	08S53332F23	CP, 100pF		
C209	23T81584F12	ELY, 47 μF/16V		
C210	23T81584F12	ELY, 47 μF/16V		
C211	08S53332F23	CP, 100pF		
C212	08S53332F23	CP, 100pF		
C850	08T57851F06	TF, 0.027μF		
Resistors				
R201	06S53330F53	CP, 1K ohm 1/8W		
R202	06S53330F53	CP, 1K ohm 1/8W		
R203	06S53330F77	CP, 10K ohm 1/8W		
R204	06S53330F77	CP, 10K ohm 1/8W		
R205	06S53331F02	CP, 100K ohm 1/8W		
R206	06S53331F02	CP, 100K ohm 1/8W		
R207	06S53330F53	CP, 1K ohm 1/8W		
R208	06S53330F53	CP, 1K ohm 1/8W		
R209	06S53331F04	CP, 120K ohm 1/8W		
R210	06S53331F04	CP, 120K ohm 1/8W		
R211	06S53330F49	CP, 680 ohm 1/8W		
R212	06S53330F49	CP, 680 ohm 1/8W		
R213	06S53330F72	CP, 6.2K ohm 1/8W		
R214	06S53330F72	CP, 6.2K ohm 1/8W		
R215	06S53330F77	CP, 10K ohm 1/8W		
R216	06S53330F77	CP, 10K ohm 1/8W		
R217	06S53330F77	CP, 10K ohm 1/8W		
R218	06S53330F77	CP, 10K ohm 1/8W		
R219	06S53330F77	CP, 10K ohm 1/8W		
R220	06S53330F77	CP, 10K ohm 1/8W		
VR201	18B44064J04	SOL, Variable 47K ohm B		
VR202	18B44064J04	SOL, Variable 47K ohm B		

Symbol No.	Part No.	Description		
Diode P.C. Board				
Diodes				
D801	48T68079F03	30D4		
D802	48T68079F03	30D4		
D803	48T68079F03	30D4		
D804	48T68079F03	30D4		
Resistors				
R801	06T71921F02	Cement 0.1 ohm 5W		
R802	06T71921F02	Cement 0.1 ohm 5W		
R803	06T71921F02	Cement 0.1 ohm 5W		
R804	06T71921F02	Cement 0.1 ohm 5W		
Misscelaneous				
D805	48T80987F01	Diode, FMG22S		
D806	48T80987F01	Diode, FMG22S		
D809	48T94566F02	Diode, FMG33		
D810	48T94566F02	Diode, FMG33		
E501	29T73269F02	Terminal 4P		
E801	29T73269F02	Terminal 4P		
E802	01T74571F01	Assembly, Coupler		
F801	65T58596F08	Auto, Fuse 30A		
F802	65T58596F08	Auto, Fuse 30A		
F803	65T58596F08	Auto, Fuse 30A		
IC501	51T94569F01	IC, μPC1298V		
IC502	51T94569F01	IC, μPC1298V		
L801	25T94610F01	Choke, Filter EI-66		
LD901	48T94616F01	LED, BR0034(RED)		
LD902	48T94616F02	LED, AA0034(ORG)		
LD903	48T94616F02	LED, AA0034(ORG)		
M801	59T94614F01	Fan		
M802	59T94614F01	Fan		
Q503	48T64376F01	TR, 2SC3423		
Q504	48T64376F01	TR, 2SC3423		
Q509	48T60555F02	TR, 2SC3298		
Q510	48T60555F02	TR, 2SC3298		
Q511	48T60556F02	TR, 2SA1306		
Q512	48T60556F02	TR, 2SA1306		
Q513	48T58609F02	TR, 2SC3182		

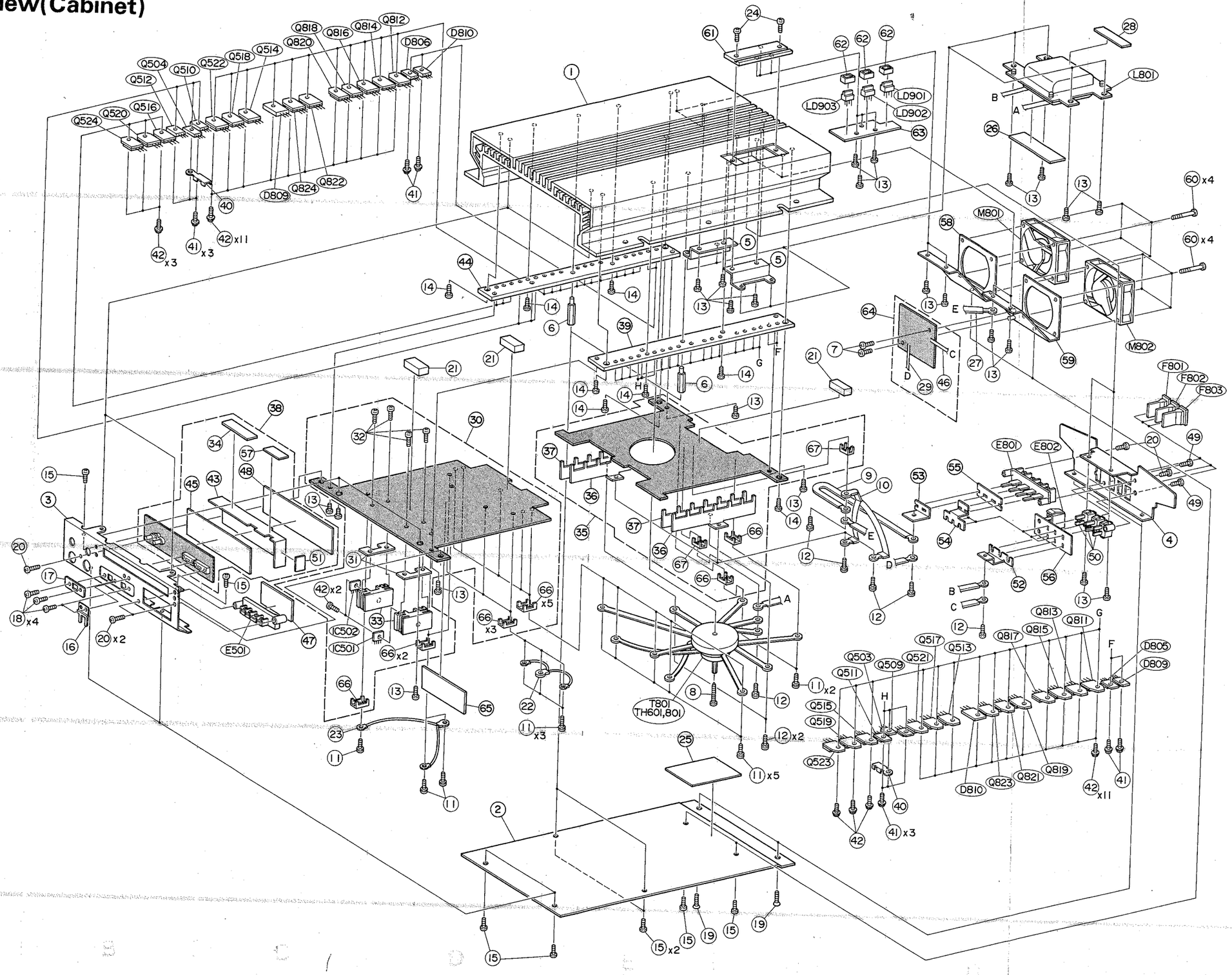
Symbol No.	Part No.	Description		
Q514	48T58609F02	TR, 2SC3182		
Q515	48T58610F02	TR, 2SA1265		
Q516	48T58610F02	TR, 2SA1265		
Q517	48T58609F02	TR, 2SC3182		
Q518	48T58609F02	TR, 2SC3182		
Q519	48T58610F02	TR, 2SA1265		
Q520	48T58610F02	TR, 2SA1265		
Q521	48T58609F02	TR, 2SC3182		
Q522	48T58609F02	TR, 2SC3182		
Q523	48T58610F02	TR, 2SA1265		
Q524	48T58610F02	TR, 2SA1265		
Q809	48T94568F01	FET, 2SK817		
Q810	48T94568F01	FET, 2SK817		
Q811	48T47613F03	TR, 2SD1065		
Q812	48T47613F03	TR, 2SD1065		
Q813	48T47613F03	TR, 2SD1065		
Q814	48T47613F03	TR, 2SD1065		
Q815	48T47613F03	TR, 2SD1065		
Q816	48T47613F03	TR, 2SD1065		
Q817	48T47613F03	TR, 2SD1065		
Q818	48T47613F03	TR, 2SD1065		
Q819	48T47613F03	TR, 2SD1065		
Q820	48T47613F03	TR, 2SD1065		
Q821	48T47613F03	TR, 2SD1065		
Q822	48T47613F03	TR, 2SD1065		
Q823	48T47613F03	TR, 2SD1065		
Q824	48T47613F03	TR, 2SD1065		
T801 TH601 TH801	25T94611F01	Trans, DC-DC 3545		

Cabinet Assembly Parts List

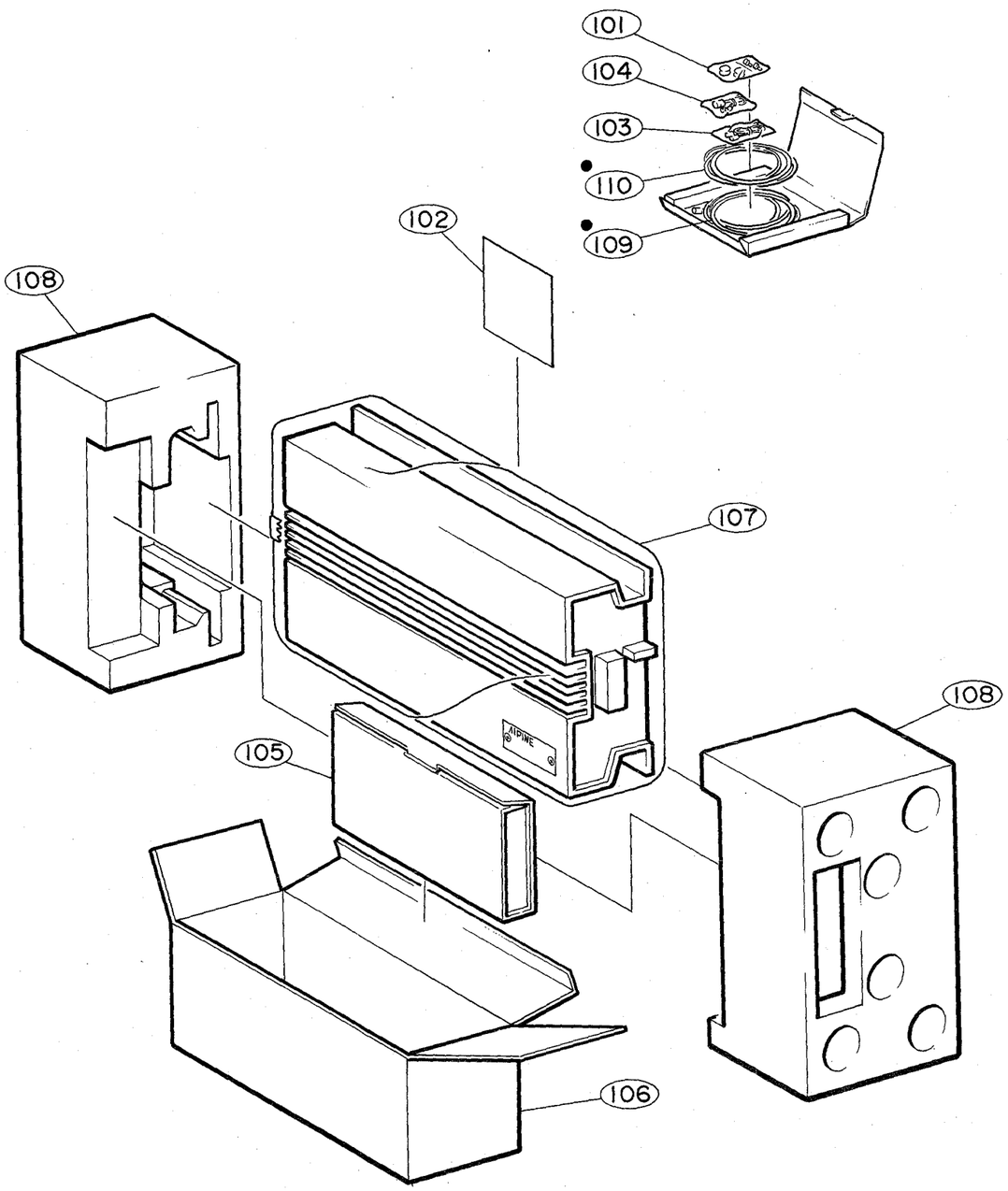
Symbol No.	IN-dex	Part No.	Description		
6	2-D	46A93258F01	Stud, Screw,		
7	2-F	03S40011G31	Screw, Pan (M2.6×4)		
8		03S72235F30	Screw, Bind(M4×40)		
9	3-F	01T95139F01	Assembly, Supply Wire GND I		
10	3-F	01T95140F01	Assembly, Supply Wire GND W		
11		03S40121T32	Screw, W/Washer(M3×6)		
12		03S40121T33	Screw, W/Washer(M4×10)		
13		03S63857F36	Screw, Tapping (M3×6)		
14		03S63857F39	Screw, Tapping (M3×12)		
15		03S44205G04	Screw, Pan (M3×5)		
16	4-B	07A73138F01	Bracket, SW Lock		
17	4-B	14A73139F01	Insulator, SW Lock		
18	4-A	03S43997P51	Screw, Round (M2.6×4)		
19		03S44205G50	Screw, CounterSink (M3×6)		
20		03S40012G41	Screw, Tapping (M3×8)		
21		75S72374F36	Cushion, Rubber		
22	4-D	01T94631F01	Assembly, Supply Wire		
23	5-C	01T94631F02	Assembly, Supply Wire		
24	1-F	03S72235F28	Screw, Pan (M1.4×6)		
27	2-G	01T15031W01	Assembly,Chas.GND Wire		
28	1-H	14S81481F55	Insulator, Cover		
29	2-G	01T95004F01	Assembly, ANTI-REV Connector		
31	4-C	14A96276F01	Insulator, TR		
32	3-C	03S40011G17	Screw, Pan (M3×6)		
34	3-C	14S96390F08	Insulator, Cover		
40		09T74442F01	Holder, TH		
41		03S71252F04	Screw, W/Double Washer (M3×9)		
42		03S71252F05	Screw, W/Double Washer (M3×10)		
46	2-G	01T95004F02	Assembly, ANTI-REV Connector		
48	3-C	14A96543F02	Insulator, Cover		
49	3-H	03S68555F02	Screw, Pan(M2 ×5.5)		
50	3-H	09T70751F01	Holder, Auto Fuse 1P		
51	4-C	14S94461F22	Insulator, Cover		
57	3-C	14S94461F21	Insulator, Cover		
60		03S44205G71	Screw, Bind(M3×28)		
62	1-F	43A96567F01	Spaser, LED		
66		29T94619F01	Terminal(M3)		
67	4-E	29T94618F01	Terminal(M4)		

Note:The parts without numbers are not supplied.

Exploded View(Cabinet)



Packing Method View



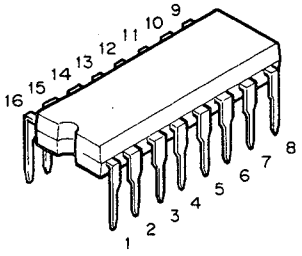
Packing Assembly Parts List

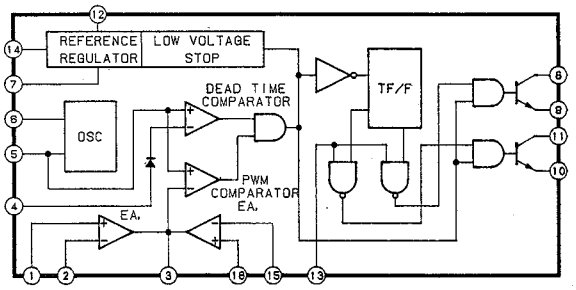
Symbol No.	Part No.	Description
101	01V94200F28	Assembly, Kit Instal
■ 101-1	65T58596F08	Auto Fuse 30A (For Battery line)
■ 101-2	03S40018G07	Screw, Tapping(M4 ×14)
■ 101-3	15A81064F01	Housing, Rubber
● 102	01V94200F29	Assembly, Pamphlet
■ 102	68P93881F29	Owners Manual
103	01T95123F01	Assembly, Kit Wire
104	01T94453F01	Assembly, RCA-DIN
105	56B94688F01	Pad, Packing
106	56S90024F71	Carton, Packing(IND)
107	56B72811F01	Sack, Polyethylene
108	56D94654F01	Tray, Packing(L)
● 109	01T95259F01	Assembly, Battery Wire
● 110	01T95260F01	Assembly, Grand Wire

Note: ● ;North American model only(AO),
■ ;General foregin model only(GO), Other;Common

Semi-Conductor Lead Identifications

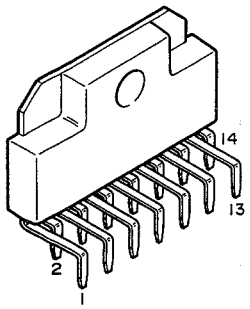
μPC494C:IC601

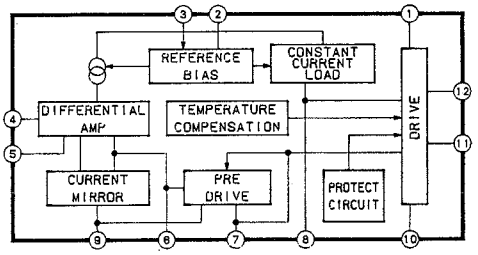




1	Non-Inv. Input	9	E_1
2	Inv. Input	10	E_2
3	Feed-Back	11	C_2
4	Dead Time Control	12	Vcc
5	C_T	13	Output Control
6	R_T	14	Ref Out
7	GND	15	Inv. Input
8	C_1	16	Mon-Inv. Input

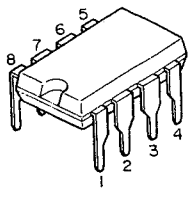
μPC1298V:IC501, 502

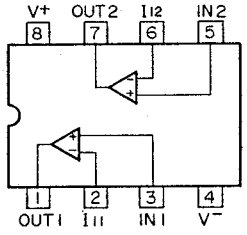




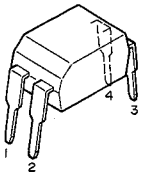
1	+VccD	8	Bias
2	+VccP	9	-VccP
3	Muting	10	-VccD
4	Non-Inv. Input	11	Output 2
5	Inv. Input	12	Output 1
6	Phase Equalize	13	N.C
7	Bias	14	N.C

μPC4570C:IC201, 202
μPC4558C:IC606
M5238P:IC801

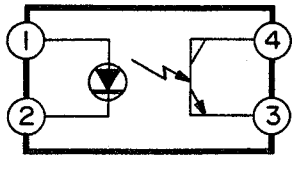




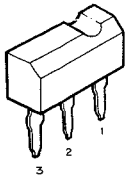
RS2401-1:IC602, 603, 604, 605



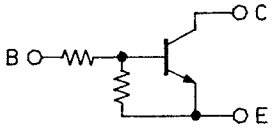
(1) Anode } LED
(2) Cothode }
(3) Emitter } Photo-
(4) Collector } transistor



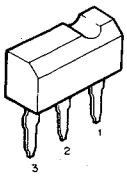
DTC114Y:Q804



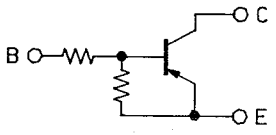
(1) Emitter
(2) Collector
(3) Base



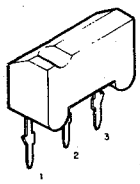
DTA114Y:Q618



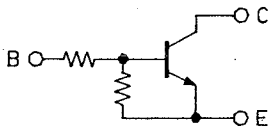
(1) Emitter
(2) Collector
(3) Base



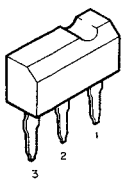
UN1211:Q802



(1) Emitter
(2) Collector
(3) Base

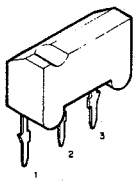


2SA937M:Q507, 508, 603, 604, 612, 617, 825, 826
2SC1615:Q505, 506
2SC2021:Q601, 602, 805, 806
2SC2021M:Q615, 616



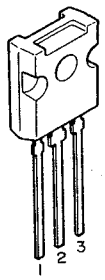
(1) Emitter
(2) Collector
(3) Base

2SD1330:Q501, 502, 605



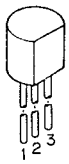
(1) Emitter
(2) Collector
(3) Base

2SC3423:Q503, 504
2SA1358:Q828
2SC3421:Q827



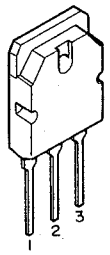
(1) Emitter
(2) Collecter
(3) Base

2SC2003:Q607, 609, 611, 614
2SA954 :Q606, 608, 613



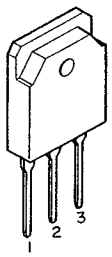
(1) Emitter
(2) Collecter
(3) Base

2SA1265:Q515, 516, 519, 520, 523, 524
2SC3182:Q513, 514, 517, 518, 521, 522



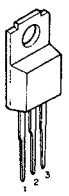
(1) Base
(2) Collecter
(3) Emitter

2SD1065:Q811, 812, 813, 814,
815, 816, 817, 818,
819, 820, 821, 822,
823, 824



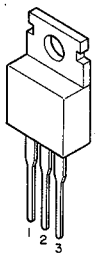
(1) Base
(2) Collecter
(3) Emitter

2SA1306:Q511, 512



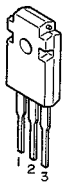
(1) Base
(2) Collecter
(3) Emitter

2SA490:Q801, 803



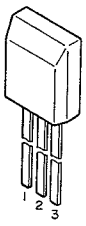
(1) Base
(2) Collecter
(3) Emitter

2SC3298:Q509, 510



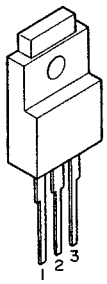
(1) Base
(2) Collecter
(3) Emitter

2SB1093:Q610



(1) Emitter
(2) Collecter
(3) Base

2SK817:Q809, 810



(1) Gate
(2) Drain
(3) Source